NUTRITION REVIEWS

VOLUME 16 NUMBERS 1-12

January—December 1958

Published by

THE NUTRITION FOUNDATION, INC.

99 PARK AVENUE NEW YORK 16, N. Y.

Copyright, 1958, Nutrition Foundation, Inc., New York, N. Y., U.S.A.

Editor

FREDRICK J. STARE, PH.D., M.D., Professor of Nutrition, Schools of Medicine and Public Health, Harvard University; Associate in Medicine, Peter Bent Brigham Hospital, Boston. Editorial Office, One Shattuck Street, Boston, Mass.

Assistant Editor

JEAN M. HOEGGER, One Shattuck Street, Boston

Associate Editors

GEORGE M. BRIGGS, PH.D., National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda
WILLIAM H. DAUGHADAY, M.D., School of Medicine, Washington University, St. Louis
JAMES S. DINNING, PH.D., Department of Biochemistry, University of Arkansas School of Medicine, Little Rock
R. W. ENGEL, PH.D., Department of Biochemistry and Nutrition, Virginia Polytechnic Institute, Blacksburg
ALFRED E. HARPER, PH.D., Department of Biochemistry, College of Agriculture, University of Wisconsin, Madison
D. M. HEGSTED, PH.D., Department of Nutrition, Harvard School of Public Health, Boston
JAMES F. MEAD, PH.D., Department of Physiological Chemistry, School of Medicine, University of California, Los Angeles
OLAF MICKELSEN, PH.D., National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda
OLOF H. PEARSON, M.D., Sloan-Kettering Institute, Memorial Center, Cornell University Medical College, New York
WILLIAM J. PYLES, M.D., Department of Medicine, St. Luke's Hospital, New York
JAMES H. SHAW, PH.D., Schools of Dental Medicine and Public Health, Harvard University, Boston
ELMER H. STOTZ, PH.D., Department of Biochemistry, School of Medicine, University of Rochester, Rochester
ROBERT W. WISSLER, PH.D., M.D., Department of Pathology, University of Chicago
CALVIN W. WOODRUFF, M.D., Department of Pediatrics, Vanderbilt University Medical School, Nashville.

Editorial Committee

WALLACE R. AYKROYD, M.D., Food and Agriculture Organization
GEORGE R. COWGILL, PH.D., Yale University
CHARLES S. DAVIDSON, M.D., Boston City Hospital
CONRAD A. ELVEHJEM, PH.D., University of Wisconsin
IAGO GALDSTON, M.D., New York Academy of Medicine
WENDELL H. GRIFFITH, PH.D., University of California
CHARLES GLEN KING, PH.D., Nutrition Foundation
BERWYN F. MATTISON, M.D., American Public Health Association
L. A. MAYNARD, PH.D., Cornell University
HAZEL STIEBELING, PH.D., Institute of Home Economics
LEROY VORIS, PH.D., National Research Council
WARREN WEAVER, PH.D., Rockefeller Foundation
JOHN B. YOUMANS, M.D., Vanderbilt University

Subscription should be sent to The Nutrition Foundation, Inc., 99 Park Ave., New York 16, N. Y.
Rate $4.00 per year in the United States and Canada; $4.50 in other countries.
Changes of address should be sent to The Nutrition Foundation.
Entered as second-class matter at the Post Office at Baltimore, Md.

Note: Items may be quoted from NUTRITION REVIEWS without special permission. If quotations are made, the editors ask only that credit be given to NUTRITION REVIEWS and that they be made in such a way that the original meaning of the review is preserved.

The quality and independence of the research program are safeguarded by referee action and counsel of the Scientific Advisory Committee:

C. H. Best
University of Toronto
Carl F. Cori
Washington University
Floyd S. Daft
U.S. Public Health Service
William J. Darby
Vanderbilt University
Grace A. Goldsmith
Tulane University
Wendell H. Griffith
University of California
A. Baird Hastings
Harvard University
H. E. O. Heineman
Pet Milk Company
Icie M. Hoobler
Merrill-Palmer School
A. L. Lehninger
Johns Hopkins School of Medicine
L. A. Maynard
Cornell University
E. M. Nelson
U. S. Food & Drug Administration
W. H. Sebrell
National Institutes of Health
R. R. Williams
Williams-Waterman Fund

THOSE WHO SUPPORT THE FOUNDATION

MEMBERS: Abbotts Dairies, Inc., Adolph's, Ltd., American Can Company, American Home Foods, Inc., American Lecithin Company, Inc., American Sugar Refining Company, Armour & Company, The Baker Laboratories, Inc., Beech-Nut Life Savers, Inc., The Borden Company, Buitoni Foods Corp., California Packing Corporation, Campbell Soup Company, Canada Packers, Ltd., The Coca-Cola Company, Container Corporation of America, Continental Baking Company, Inc., Continental Can Company, Inc., Corn Products Company, The Crosse & Blackwell Company, General Foods Corporation, General Mills, Inc., Gerber Products Company, Green Giant Company, Chr. Hansen's Laboratory, Inc., H. J. Heinz Company, Illinois Canning Company, The Kellogg Company, Chas. B. Knox Gelatine Company, Lever Brothers Company, Libby, McNeill & Libby, Eli Lilly and Company, Thomas J. Lipton, Inc., Oscar Mayer and Co., McCormick & Co., Merck and Co., Inc., National Biscuit Company, National Dairy Products Corporation, The Nestle Company, Inc., Owens-Illinois, Pepsi-Cola Company, Pet Milk Company, Pillsbury Company, The Procter & Gamble Company, The Quaker Oats Company, Red Star Yeast & Products Company, Richmond-Chase Company, Safeway Stores, Inc., Standard Brands, Inc., The Stouffer Corporation, Sunkist Growers, Sunshine Biscuits, Inc., Swift & Company, United Fruit Company, Welch Grape Juice Company, Inc., Zinsmaster Baking Company.

DONATIONS RECEIVED FROM: J. H. Filbert, Inc., Hershey Chocolate Corporation, Osceola Foods, Reynolds Metals Co., A. E. Staley Mfg. Co.

FOOD INDUSTRIES ADVISORY COMMITTEE

This committee serves as an advisory group and as a means of maintaining a close relationship between the Foundation's program and the technical staffs of the member firms.

Edwin J. Abeling
John S. Andrews
W. E. Baier
H. A. Barnby
O. K. Behrens
C. R. Bergquist
Thomas W. Biggs
John S. Brod
Basil W. Clarke
Victor Conquest
Joseph Eichberg
A. L. Elder
I. E. Friedman
S. L. Galvin
William Grosvenor, Jr.
Richard L. Hall
C. G. Harrel
Arthur J. Harriman
H. E. O. Heineman
E. E. Howe
R. K. Hower
Theodore F. Irmiter
Arnold H. Johnson
William R. Johnston
H. L. Kravitz
R. B. Lewis
F. D. Long
Roger H. Lueck
Orville E. May
E. A. Meyer
Margaret L. Mitchell
W. W. Paddon
L. B. Parsons
F. N. Peters
G. L. Poland
Gerald Reed
R. A. Reinecke
Alan C. Richardson
Guy C. Robinson
H. E. Robinson
C. L. Rumberger
John J. Sampey
R. M. Schaffner
George C. Scott
E. C. Sloan
J. C. Sluder
Philip W. Souder
Robert G. Thomas
J. J. Thompson
Walter L. Thompson
Dee Tourtellotte
Ray Wakefield
R. H. Walters
Marie White
R. Witty
L. Ylvisaker

The publication of NUTRITION REVIEWS has been undertaken to enable professionally trained people to keep abreast of current progress, and to have available an unbiased, authoritative review of the current research literature in the science of nutrition.

The Editorial Staff has been carefully selected so that the publication will merit, in reasonable degree, the confidence of the medical profession and others who work directly with the public in the field of nutrition. The service provided by the publication is distinct from that of an abstract journal, a review for laymen, or an extensive scientific review. Since the reviews as originally prepared by a member of the Editorial Staff are frequently modified by special referees and may be further modified by the Editorial Office in preparing final copy for the press, the Editorial Committee feels that it is preferable not to affix the names of Editorial Staff members to individual reviews. There is thus a high degree of group responsibility on the part of the Editor and Associate Editors.

Signed articles do not necessarily represent the opinion of the Editorial Staff.

THE NUTRITION FOUNDATION

The Nutrition Foundation was organized by food and related manufacturers in December, 1941, as a sincere expression of their interest in scientific progress and human health. The basic purposes of the Foundation are: (1) the development of a comprehensive program of fundamental research, providing basic information in the science of nutrition; and (2) the support of educational measures that will assist in making the science of nutrition effective in the lives of present and future generations.

The Foundation functions chiefly through grants-in-aid in support of research in university medical centers where there are facilities for research in the basic sciences and public health.

The entire program is one of public service. The funds of the Foundation are obtained through voluntary contributions from founder and sustaining members and donors. All member contributions are made on a five-year basis so that the Foundation can be assured of support for at least five years in planning its program. Grants are normally made twice each year, to become available on January 1st or July 1st.

Officers of The Nutrition Foundation

JAMES R. KILLIAN, JR., Chairman of the Board of Trustees

H. J. HEINZ, II, President

CHARLES G. MORTIMER, Vice President

CHARLES GLEN KING, Executive Director

HORACE L. SIPPLE, Executive Secretary and Treasurer

The Board of Trustees, the governing body of the Foundation, consists of representatives of contributing members and representatives of the general public.

BOARD OF TRUSTEES

A. C. BENJAMIN, *President, "Junket" Brand Foods, Chr. Hansen's Laboratory, Inc.*

*F. G. BOUDREAU, *President, Milbank Memorial Fund*

WILLIAM T. BRADY, *President, Corn Products Company*

CHARLES S. BRIDGES, *President, Libby, McNeill & Libby*

G. BUITONI, *President, Buitoni Foods Corp.*

*LEROY E. BURNEY, *Surgeon General, U. S. Public Health Service*

*CASON J. CALLAWAY, *Hamilton, Georgia*

*OLIVER C. CARMICHAEL, *Biltmore, North Carolina*

THOMAS P. CARNEY, *Vice President, Research, Development & Control, Eli Lilly & Co.*

HAROLD W. COMFORT, *President, The Borden Company*

GEORGE H. COPPERS, *President, National Biscuit Company*

E. B. COSGROVE, *Chairman of the Board, Green Giant Company*

JOHN N. CURLETT, *President, McCormick & Co., Inc.*

WESLEY M. DIXON, *President, Container Corporation of America*

*LEE A. DUBRIDGE, *President, California Institute of Technology*

*CHARLES WESLEY DUNN, *New York, New York*

*CONRAD A. ELVEHJEM, *President, University of Wisconsin*

THOMAS C. FOGARTY, *President, Continental Can Co., Inc.*

EDGAR J. FORIO, *Vice President, The Coca-Cola Company*

*CLARENCE FRANCIS, *New York, New York*

DANIEL F. GERBER, *President, Gerber Products Co.*

GEORGE A. GRAHAM, *Secretary-Treasurer, Charles B. Knox Gelatine Co., Inc.*

JOHN A. GRAMMER, *Executive Vice-President, Beech-Nut Life Savers, Inc.*

HENRY J. HEINZ, II, *President, H. J. Heinz Co.*

*REV. THEODORE M. HESBURGH, C.S.C., *President, University of Notre Dame*

FRANK C. HILDEBRAND, *Vice President, General Mills, Inc.*

*HERMAN E. HILLEBOE, *Commissioner of Health, State of New York*

JOHN HOLMES, *Chairman of the Board, Swift & Company*

*FREDERICK L. HOVDE, *President, Purdue University*

RIDGWAY KENNEDY, JR., *Chairman, Abbotts Dairies, Inc.*

*JAMES R. KILLIAN, JR., *President, Massachusetts Institute of Technology*

*CHARLES GLEN KING, *Executive Director of The Nutrition Foundation*

*GRAYSON L. KIRK, *President, Columbia University*

R. NEWTON LAUGHLIN, *President, Continental Baking Co.*

J. PRESTON LEVIS, *Chairman, Owens-Illinois*

R. G. LUCKS, *President, California Packing Corp.*

W. F. MCLEAN, *President, Canada Packers, Limited*

WILLIAM H. MCLEAN, *President of Chemical Division, Merck & Co.*

HANFORD MAIN, *President, Sunshine Biscuits, Inc.*

ARMAND MAY, *Chairman, American Lecithin Co., Inc.*

OSCAR MAYER, *Chairman of the Board, Oscar Mayer & Co.*

JOHN T. MENZIES, *President, The Crosse & Blackwell Co.*

CHARLES G. MORTIMER, *President, General Foods Corporation*

MILTON C. MUMFORD, *Executive Vice President, Lever Brothers Company*

W. B. MURPHY, *President, Campbell Soup Company*

H. EARLE MUZZY, *Vice Chairman, The Quaker Oats Company*

JOHN C. NAYLOR, *Senior Vice President, Pet Milk Company*

WILLIAM F. OLIVER, *President, The American Sugar Refining Co.*

*THOMAS PARRAN, *President, Avalon Foundation*

*MAURICE PATE, *Executive Director, United Nations Childrens Fund*

PHILIP W. PILLSBURY, *Chairman, Pillsbury Company*

J. G. PLEASANTS, *Vice-President in charge of Research and Development, The Procter & Gamble Company*

L. RATZESBERGER, JR., *President, The Illinois Canning Co.*

KENNETH H. REDMOND, *President, United Fruit Company*

B. E. RICHMOND, *President, Richmond-Chase Company*

LLOYD E. RIGLER, *President, Adolph's, Ltd.*

LYLE C. ROLL, *President, Kellogg Company*

R. T. RYAN, *Executive Vice-President, Welch Grape Juice Co., Inc.*

ELBERT M. SHELTON, *Secretary, The Baker Laboratories, Inc.*

WALTER SILBERSACK, *President, American Home Foods, Inc.*

*SIDNEY EARLE SMITH, *Secretary of State for External Affairs*

FREDERICK W. SPECHT, *Chairman, Armour & Company*

ALFRED N. STEELE, *Chairman, Pepsi-Cola Company*

W. C. STOLK, *President, American Can Company*

VERNON STOUFFER, *President, The Stouffer Corporation*

L. A. VAN BOMEL, *Chairman, National Dairy Products Corp.*

HENRY WEIGL, *Executive Vice President, Standard Brands Incorporated*

F. R. WILCOX, *General Manager, Sunkist Growers*

R. D. L. WIRTH, *President, Red Star Yeast and Products Co.*

H. J. WOLFLISBERG, *President, The Nestle Company, Inc.*

C. I. WOOD, *President, Thomas J. Lipton, Inc.*

HARRY W. ZINSMASTER, *President, Zinsmaster Baking Co.*

* Representative of the public.

CONTENTS OF VOLUME 16

No. 1, January 1958

An Epidemiologic Study of Heart Disease: The Framingham Study, by Thomas R. Dawber and William B. Kannel 1
Urinary Amino Acid Excretion in Children 5
Ascorbic Acid in Maternal Nutrition 6
Blood Amino Acids, Glucose and Appetite 7
Studies on Postgastrectomy Steatorrhea 9
The Pyridoxine Requirements of Infants 10
The Camel and Water 12
Blood Volume, Body Water and Fat in the Horse 14
Lysine Requirements of the Young Pig 15
Provitamin D in Animal Tissues 16
Vitamin A in Intermediary Metabolism 17
A Goitrogenic Factor from the Groundnut 19
Elucidation of Bacterial Growth Factors 21
Biological Value of Algae Protein 22
Heme Synthesis in Pantothenic Acid and Pyridoxine Deficiencies 23
The Biological Role of Aluminum 23
Diet and Gallstones 25
Glycine Metabolism in Tissues 29
Letters to the Editor 31
Recent Nutrition Books 32

No. 2, February 1958

Essential Fatty Acids, by Ralph T. Holman 33
Follow-up Studies on Kwashiorkor 36
New Hypotheses Concerning Wilson's Disease 37
Urinary Amino Acid Excretion in Disease 39
Cholesterol in Diet and Serum 42
Thiamine in Human Milk 44
Amino Acid Supplementation of Rice 46
Hereditary Glycinuria 48
Lysine and Feather Pigmentation 50
Measurement of Energy Content of Foodstuffs 51
Passage of Iodine through the Placenta 52
Food Intake and Water Relationships 53
Metabolism of Essential Fatty Acids 55
Nutritive Value of Proteins 56
Feeding Patterns in Mice 58
Trans-Acids as Essential Fatty Acid Antagonists 59
Glucagon Effect on Gastric Activity 60
Letter to the Editor 62
American Board of Nutrition 62
Third Inter-African Conference on Nutrition 63
Recent Nutrition Books 64

No. 3, March 1958

The Program of the Council on Food and Nutrition of the American Medical Association, by Philip L. White 65
Food Patterns of Infants 67
Dietary Fat and Plasma Cholesterol 68
Metabolism of Fructose in Diabetic Acidosis 70
Electrolyte Levels in Dystrophic Muscles 71
Plasma Amino Acids in Liver Disease 73
Primary Hyperoxaluria 75
Self-Selected Food Consumption by Soldiers 77
Copper Nutrition in Ruminants 78

Nutritive Value of Proteins Following Irradiation 80
Fatty Acids and Cholesterol Metabolism 81
A New Metabolite of Cysteine 82
Corn Oil and Plasma Cholesterol 83
Pyridoxine and Serotonin Formation 85
Mitochondrial Changes in Essential Fatty Acid Deficiency 86
Methionine Sulphoxide and Hypertension 87
Dietary Peanut Oil in Chicks 89
Effect of Digitalis on Potassium Deficiency Heart Lesions 90
Mast Cells and Calcium Deficiency 92
The Fourth International Congress of Nutrition: A Report 94
Inositol Requirement of Isolated Human Cells 95
Prevention of Pancreatic Fat Necrosis by Dextran 95
Letter to the Editor 96
Recent Nutrition Books 96

No. 4, April 1958

Food Faddism—Why?, by Robert E. Olson 97
Electrolyte Disturbances in Chronic Malnutrition 99
Evaluation of Skeletal Age in Roentgenograms 101
Plasma Unesterified Fatty Acids 102
Methionine and Urinary Ammonia 105
Nutritional Requirements of Fish 106
Improving the Nutritional Value of Barley 108
Origin of Serum Cholesterol in the Rat 110
Growth Promoting Activity of Gelatin 111
Factors Affecting Iron Absorption 113
The Nutritive Value of Bacterial Proteins 115
Essential Fatty Acids in Cell Permeability 116
Long Term Ingestion of Fluorides 117
Experimental Lipogenesis 121
Inositol Requirement of Tissues 125
Vitamin-Sparing Action of Sorbitol 126
Carotene, 20,000 Years Old 127
Folacin and Histidine Biosynthesis 127
Gordon Research Conferences 128
Recent Nutrition Books 128

No. 5, May 1958

Coronary Heart Disease in Australia, by E. H. Hipsley 129
Mechanism of Serum Cholesterol Lowering by Seed Fats 131
Lysine Supplementation in Gerontology 132
Nonesterified Fatty Acid Metabolism in Diabetes Mellitus 135
Urine Proteolytic Activity 137
Vitamin D Deficiency in the Cat 140
Calcium Metabolism of Dairy Cows 141
Pyridoxine, Pantothenic Acid and Heme Synthesis 142
Comparison of High-Extraction and Enriched Flour and Bread 144
Diet and the Ovarian Cycle of the Baboon 145
Vitamins from Rhodotorula Yeast 147
Calcium Metabolism in Rats 148
Vitamin E and Selenium, Part I 149
Effect of Growth Hormone on Fat Synthesis 152
Dietary Calcium and Radiostrontium Retention 153
Lipotropic Factors and Serum Phospholipids 154
Cytochrome C Levels in Iron Deficiency without Anemia 155
Role of Glutamine in Tissue Culture 157

Letter to the Editor ... 159
Vitamin D and Atherosclerosis ... 159
Nutrition and Pediatrics ... 160
Recent Nutrition Books ... 160

No. 6, June 1958

Pyridoxine and Cerebral Activity, by Donald B. Tower ... 161
Progress in Parenteral Nutrition with Fat Emulsions ... 164
Folacin Metabolism in Sprue ... 166
Aspirin and Diabetes ... 167
Cholesterol Absorption in the Human ... 168
Iron Absorption in Infants and Children ... 170
Fructose Metabolism in Dairy Cows ... 172
Magnesium Deficiency in Calves ... 173
Vitamin E and Selenium, Part II ... 174
Aldosterone and Steroid Glycosuria in the Cat ... 177
Vitamin B_6 and Trans-sulfuration ... 178
Diet and Thyroid Function ... 179
Mineral Balance in Guinea Pigs ... 181
Fasting and in Vitro Liver Protein Release ... 183
The Adrenal Cortex in Carbohydrate Metabolism ... 185
Toxicity of Cholesterol-Fatty Acid Mixtures ... 186
Nutrition Studies in the Cold ... 188
Spermine as a Growth Stimulant ... 190
Food Faddism ... 191
The Fluid Intake of Small Children ... 191
Carotenoid Stores in Man ... 192
Recent Nutrition Books ... 192

No. 7, July 1958

Interdepartmental Committee on Nutrition for National Defense, by A. E. Schaefer ... 193
Nutrition and Nitrogen Metabolism in the Surgical Patient ... 196
Thiamine and Riboflavin Excretion in Children ... 198
Body Water Determinations in Undernourished Individuals with Edema ... 199
Pentose Metabolism in Man ... 200
Food Intake in the Arctic ... 202
Serum Glutamic-Oxalacetic Transaminase Activity Following Operation ... 204
Increased Renal Calcium Clearance with Vitamin D ... 205
The Use of Volatile Fatty Acids by Ruminants ... 207
Nutrition and the Onset of Reproductive Activity ... 209
Experimental Xanthomatosis ... 211
Histidine and Experimental Atherosclerosis ... 213
Physiological Roles of Carnitine ... 214
Amino Acid Metabolism in Protein Deficiency ... 216
Effect of Maleic Hydrazide on Rat Liver ... 217
Ascorbic Acid and Collagen Formation ... 218
Biological Value of Proteins ... 220
Phosphate Activity in White Cells ... 222
Uptake of Radioactive Tryptophan by Malignant Carcinoid Tumor ... 223
Letter to the Editor ... 224
Recent Nutrition Books ... 224

No. 8, August 1958

Nutrition and Chronic Disease Control, by L. E. Burney ... 225
Reducing Obese Subjects ... 228
Vitamin B_{12} Metabolism in Liver Disease ... 230
Pyridoxal Phosphate in Human Blood ... 231

Feeding the Newborn Infant ... 233
Wheat Gluten in Adult Steatorrhea ... 234
Refractoriness to Intrinsic Factor ... 235
Climate and Caloric Intake ... 237
Artificial Feeding Among the Baganda ... 238
Thiamine Deficiency in Infants ... 240
Poultry Breed Differences in Sulfur-Amino Acid Metabolism ... 241
Growth of Animals Fed Raw Soybeans ... 242
Tetracycline Fluorescence of Body Tissues and Tumor Tissues ... 244
Erucic Acid and Fertility ... 245
Cortisone Effects on Bone Mineral Metabolism ... 247
Toxic Effects of Antimetabolites ... 248
Iron Metabolism in Protein Deficiency ... 251
Vitamin B_{12} and Protein Synthesis ... 252
Effects of Growth Hormone from Human Pituitaries ... 253
Hot Weather Feeding of Children and Infants ... 255
Recent Nutrition Books ... 256

No. 9, September 1958

Nutrition and Behavior, by Josef Brožek ... 257
Treatment and Prevention of Kwashiorkor ... 259
The Role of Breast Feeding in Immunity ... 261
Beta Lipoproteins and Serum Lipids ... 263
Obesity and Liver Impairment ... 266
Biochemical and Nutritional Studies of the Bantu ... 267
Calcium Metabolism and Hyperthyroidism ... 269
Nutritional Status of Cuban Children ... 271
War Food Shortages and Diabetes Mellitus in Japan ... 273
Russian Research on Experimental Atherosclerosis ... 274
Rickets and Fluorosis ... 277
The Thermochemical Efficiency of Growth ... 279
Aspirin and Muscle Metabolism ... 281
Behavior of Insulin Labeled with Radioactive Iodine ... 283
Effect of Dietary Fat on Depot Fat ... 284
Caloric Intake and Nitrogen Balance ... 285
Metabolic Effects of Amino Acid Deficiency ... 287
Appetite Stimulation in Children ... 287
Ferritin and Nutritional Edema ... 288
Recent Nutrition Books ... 288

No. 10, October 1958

Insect Control vs. Human Nutrition, by George C. Decker ... 289
Formula Diet for Weight Reduction ... 292
Tryptophan Metabolites and Carcinoid Tumors ... 294
Sulfate Content of Synovial Fluid ... 295
Diabetes and the Birth of Large Infants ... 296
Diet and Portal Vein Pressure ... 298
Rumen Parakeratosis from Pelleted Feeds ... 299
Bloat in Ruminants ... 300
The Regulation of Thirst ... 302
Protein Starvation and Nucleic Acids ... 304
Pantothenic Acid, Ascorbic Acid and Intestinal Microflora ... 305
Intrinsic Factor and Absorption of Vitamin B_{12} ... 307
Pyridine Derivatives as Growth Factors ... 310
Citrate, Oxalacetate and Ketosis ... 312
Effects of an Excess of a Single Essential Amino Acid ... 313
Calcium and Strontium in Lactation ... 315

Dietary Lipogranuloma in Rats ... 317
Letter to the Editor ... 319
The Nutrition Society of Canada ... 320
Fat Metabolism and Diabetes ... 320
Recent Nutrition Books ... 320

No. 11, November 1958

Nutrition of Mammalian Cells in Tissue Culture, by R. P. Geyer ... 321
Genetic Aspects of Metabolic Disease in Childhood: Part I ... 323
Biological Life of Vitamin B_{12} ... 325
Protein Requirements of Children ... 326
Protein Requirements in Chronic Renal Disease ... 329
Proteins in Anemia ... 330
Studies on Dietary Lipids ... 331
In Vivo Protein Digestion ... 334
Allithiamine ... 336
Proteinuria in Rats and Mice ... 337
Hydroxylsine in Collagen Biosynthesis ... 340
Intestinal Permeability to Proteins ... 342
The Availability of Lysine in Foods ... 344
Choline Deficiency and the Morphologic Effects of Serotonin ... 347
Transport of Fatty Acids ... 348
Dietary Fat, Obesity and Longevity ... 350
Breast Feeding in the United States ... 351
Fatty Acids and Protein Digestion ... 351
Lipotropic Factors ... 352
Recent Nutrition Books ... 352

No. 12, December 1958

Cell Enzymes and Iron Metabolism in Anemias and Siderosis, by Theodore Gillman ... 353
Author Index ... 356
Subject Index ... 363